

CLAIMS

1. An alignment apparatus, comprising:

a position detection optical system which detects
a position of a mark formed on a street line of a
substrate; and

a focus detection system which irradiates a
detection light to the substrate, and which detects
deviation between an irradiated region and a focused
surface of the position detection optical system by
detecting a reflected light of the detection light, the
detection light is irradiated on a region of said street
line on which is different from a region formed said
mark.

2. The alignment apparatus as set forth in claim 1,
wherein:

said street line exists in a first direction and
in a second direction perpendicularly crossing with the
first direction; and

said focus detection system comprises a first
detection system using a first detection light extending
along with said first direction and a second detection
system using a second detection light extending along
with said second direction.

3. The alignment apparatus as set forth in claim 2,
wherein at least one of said first and second detection

systems detects a plurality of portions on said street lines.

4. The alignment apparatus as set forth in claim 2, wherein said focus detection system makes a comparison of intensities of reflection lights of said first and second detection lights, and performs focus detection by using either one of said first or second detection system in accordance with the comparison result.

5. The alignment apparatus as set forth in claim 2, wherein said focus detection system performs focus detection by using said first detection system when a street line on which a mark for position detection exists is along said first direction, and using said second detection system when the street line is along said second direction.

6. An exposure apparatus wherein a predetermined pattern is exposed to be transferred onto a substrate which is aligned by the alignment apparatus as set forth in claim 1.

7. An alignment method for aligning a substrate on which a mark is formed on a street line, including the steps of:

irradiating a detection light on a region on said street line before detecting a position of the mark by a position detection optical system, the region is

different from a region formed said mark;

detecting deviation between an irradiated region
and a focused surface of said position detection optical
system by detecting a reflected light of the detection
5 light.

8. The alignment method as set forth in claim 7,
wherein:

said street line exists in a first direction and
a second direction perpendicularly crossing with the
10 first direction; and

a first detection light extending along with said
first direction and a second detection light extending
along with said second direction are irradiated as said
detection lights.

15 9. The alignment method as set forth in claim 8,
wherein intensities of reflection lights of said first
and second detection lights are compared and focus
detection is performed by using either one of said first
and second detection lights in accordance with the
20 comparison result.

10. The alignment method as set forth in claim 8,
wherein focus detection is performed by using said first
detection light when a street line on which a mark for
position detection exists is along said first direction,
25 and using second detection light when the street line is

along said second direction.

11. An exposure method, including the steps of:

aligning a photosensitive substrate as an object
to be exposed by using the alignment method as set forth

6 in claim 7; and

exposing the aligned photosensitive substrate
with a pattern formed on a mask.